University News

Roorkee Varsity Convocation

Shri P.V. Narasimha Rao, Union Minister for Human Resource Development, delivering the Convocation Address at the University of Roorkee, Roorkee.

BIRSA AGRICULTURAL UNIVERSITY

RANCHI

Advertisement No. 1/86

Applications in prescribed form are invited for the following posts alongwith Crossed Postal Order for Rs. 10/- (Non refundable) so as to reach the undersigned latest by 15.4.86. Applications received after due date will not be entertained. The applications form and other details may be had from the office of the undersigned either personally or by making written request with a self addressed 23 cm x 16 cm envelope duly stamped with postage of Rs. 3.95, separately for each post alongwith a Crossed Postal Order for Rs. 5/- (as the cost of application form). All postal orders must be drawn in favour of the Comptroller, Birsa Agricultural University, Kanke, Ranchi-6.

UNIVERSITY HEADQUARTER POSTS

(1) Director Research (1 post) Rs. 1500-2500/-+250/- Special Pay.

Qualifications

Essential

(i) Doctorate degree in any branch of Agricultural Sciences/or Animal Husbandry and Veterinary Sciences/or Forestry, (relaxable to high Second Class M.Sc. degree or equivalent postgraduate qualifications in case of candidates with exceptionally distinguished record of Productive Research and responsible leadership of productive research in the relevant fields).

(ii) 10 years' experience in teaching and/or research work as evidenced by published work in standard Research Journals of which atleast 5 years' experience should have been in a position of responsibility in an institution in which research holds an important place.

(iii) Evidence of leadership, outstanding achievement in research and organising research.

(2) Director Extension Education (1 post); Rs. 1500-2500/-+250/- Special Pay.

Qualifications

Essential

(i) Bachelors' degree in Agricultural/ Veterinary Science and A.H./Forestry followed by doctorate degree in any branch of Agril./Veterinary Sci. & A.H./Forestry.

(ii) 10 years experience of teaching and/or research or field Extension Education out of which 5 years' should be in a responsible position.

(iii) Comprehensive working knowledge of Socio-economic conditions in the tribal areas.

Desirable

(iv) Evidence of leadership and outstanding acheivement in extension and organising extension.

(3) Deputy Director Information (1 post) Pay Rs. 1200-1900/-

Qualifications

(i) Second Class Master's degree in Vet. Sci. and A.H./Agricultural Sciences/ Forestry followed by Doctorate degree.

(ii) 7 years' experience of field extension, literature, organisation of farmers' fair, field days, knowledge of other means of communication for carrying out the message of advance Agricultural/A.H./Forestry Technology. (relaxable to 5 years' in case of candidates having brilliant academic record).

(iii) Degree/diploma in journalism will be preferred.

(4) Deputy Director Training (1 post) Pay Rs 1200-1900/-

Qualifications

(i) Atleast Second Class Master's degree in Animal Husbandry/Forestry/ Agricultural Extension followed by Doctrate degree.

(ii) Seven years' experience of teaching/ research/extension (relaxable to 5 years' in case of candidates having brilliant academic record).

(iii) Candidates with experience of organising training programmes will be preferred.

FACULTY POSTS

AGRICULTURE

(1) University Professor-cum-Chief Scientist (1 each in Soil Science, Horticulture and Plant Pathology) Pay Rs. 1500-2500/-

Qualifications

(i) Doctorate degree in the subjects concerned (relaxable to High Second Class M.Sc. degree or its equivalent postgraduate qualifications in case of candidates with exceptionally distinguished record of productive research).

(ii) 10 years' experience of teaching and/or research in the subject concerned.

Desirable

(iii) Good Research experience as evidenced by published papers.

(2) Assistant Professor-cum-Junior Scientist (4 posts) (1 Agril. Economics + 3 in Horticulture) Pay Rs. 700-1600/-

Qualifications

(i) High Second Class Master's degree or equivalent postgraduate qualifications in the subjects concerned

(ii) Atleast 2 years' experience of teaching/research.

(3) Routine Analysist (1 post) Pay Rs. 600/- P.M. fixed I.C.A.R. Scheme (Soil Science and Agril. Chemistry Deptt.)

Qualifications

(i) B.Sc. Agril./B.Sc. with Chemistry as one of the subject.

Desirable

(ii) M.Sc. (Ag.) with Soil Science/M.Sc. Chemistry and Agril. Chemistry.

(4) Senior Research Fellow (Vegetables 2 posts) Pay fixed Rs. 1000/- P.M. (I.C.A.R Scheme on Improvement of Vegetable in Tribal belt of Chotanagpur in Bihar)

Qualifications

(i) High Second Class Master's degree in Horticulture preferably with specialisation in Vegetables.

VETERINARY FACULTY POSTS

(1) University Professor-cum-Chief Scientist (2 posts) One each in Animal Breeding and Veterinary Microbiology: Pay Rs. 1500-2500/-

Qualifications

(i) Doctorate degree in the subjects concerned, (relaxable to high Second Class Master's degree or its equivalent postgraduate qualifications in the case of candidates with exceptionally distinguished record of productive research).

(ii) 10 years' experience of teaching and/or research in the subject concerned.

Desirable

(iii) Good Research experience as evidenced by published papers.

(2) Associate Professor-cum-Senior Scientists (2 posts) One each in Animal Nutrition and V.P.H.E.) Pay Rs. 1200-1900/-

Qualifications

(i) Doctorate degree in the subjects concerned, (relaxable to High Second Class M.V.Sc. or its equivalent postgraduate qualification in case of candidates with exceptionally distinguished record of Productive Research).

(ii) 7 years' experience of teaching and/or research in the subject concerned.

(3) Assistant Professor-cum-Junior Scientist (3 posts) Pay Rs. 700-1600/- (One each in Veterinary Pathology, Anatomy and Extension Education).

Qualifications

(i) High Second Class Master's degree or its equivalent postgraduate qualifications in the subject concerned.

(ii) Atleast 2 years' experience of teaching/research.

TERMS AND CONDITIONS

(1) Number of vacancies as indicated may increase or decrease as per need.

(2) The University reserves the right not to fill up any post even after selection.

(3) Higher starting salary may be admissible to highly qualified and experienced candidates on the recommendation of the Selection Committee.

(4) Though the Hqrs. of the posts are indicated above, persons appointed may be transferred anywhere within the jurisdiction of the Birsa Agricultural University.

(5) The Selected candidates will be required to execute a Bond before appointment to serve the University atleast for a period of three years for posts of the Assistant Professor and below and two years in case of posts in the rank of Associate Professor and other superior posts.

(6) The services of the person selected and appointed against the I.C.A.R. Posts will be temporary and will last only till the duration of the Scheme.

(7) All applications should be sent to the address of Establishment Officer (Rectt.), Birsa Agricultural University, Veterinary Campus, Kanke, Ranchi-834007 by registered post. Persons already in employment are requested to send their applications through Proper Channel. Applications received after due date will not be entertained.

R. P. Singh
ESTABLISHMENT OFFICER (RECTT.)

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IN THIS ISSUE

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Inter-Disciplinary Approach to Education
—A Proposal

B. K. Passi*

Educational institutions design their activities of teaching, research and extension on the basis of disciplinary approach. The school students receive isolated experiences provided through disciplinary curriculum segmented into Languages, Sciences, Mathematics, Humanities, etc. To give an example, it is possible that the teacher of science might not relate teaching-learning processes of science teaching with that of languages and humanities. This problem gets aggravated when we find that even the support system of textbooks, is disciplinary in nature. Similarly, the examination of the students are arranged on the lines of isolated disciplines. Therefore, the child cannot develop a holistic picture of the knowledge on the basis of these isolated and unrelated experiences. The situation is equally bad in the colleges. The youth in the college has to follow strict and rigid disciplinary structures while selecting subjects and textbooks. Again, his academic preparation of the examination is fragmentary.

The teachers at all levels of higher education are trained through disciplinary approaches. By virtue of their training they tend to believe in the superiority of disciplinary approach, the increasing specialisation reinforces this belief. The international competition in research compels the teacher-researchers to focus upon the narrowest possible area of research in the periphery of their own disciplines. The interdisciplinary problems and methodologies are neglected, rather disdained.

The organisation of faculties and departments in the universities is in accordance with the disciplinary arrangements. One can easily identify sub-structures like Department of Chemistry, Department of Economics, Department of Education and so on. The appointment of teachers, budgetary allocations, the administrative arrangements and the teaching-learning environment are exclusively based on the disciplinary mechanism. Eventually, these arrangements strengthen inbreeding of disciplinary tendencies. The members of these rigid departmental sub-structures do not appreciate problems falling outside their given domains. The structural arrangements in the form of isolated departments, therefore, create barriers between various disciplines.

To counteract the increasing rigidity and isolation, informal and more flexible grouping of expert teams need to be introduced on priority basis in the universities. These sub-structures representing informal teams of workers may continue to follow teaching and research activities till the planned projects continue. Once the planned project is complete, the volunteer teams of experts are regrouped into new teams according to the new problems and new plans. Will the universities re-examine their structural arrangements so that multidisciplinary volunteer groups or experts can spontaneously address themselves to more realistic problems chosen by these expert groups ? This would mean that researchers and experts will not be assigned to any department on permanent basis and for all times to come.

**Head, Department of Education, Devi Ahilya Vishwavidyalaya, Indore.*

The problems existing in the society are generally multicausal and multifaceted. The partial analysis of these problems is inadequate for designing any serious action. The problem of drop-out in schools, unemployment of youth, imbalanced agricultural green revolution, family planning etc. are a few examples. The disciplinary preparation of graduates in higher education has failed to equip graduates with the necessary information, skills and attitudes required for the solution of such vital problems of the society. It is assumed that inter-disciplinary preparation of youth is not only relevant according to the social needs but also imperative to develop the youth according to his potentials. The inter-disciplinary approach is more humane and democratic. This will also increase the diversity of our manpower output. Today universities prepare youth for homogeneous areas of arts, science, home science, agriculture etc. The scope of offering inter-faculty subjects does not exist. Does it mean persons knowing Biology from Science faculty, Psychology from Arts faculty, and Pedagogy from Education faculty are not required ? The reality is otherwise. There is a great need of such persons in the training situations existing in army, industry, and schools. Similarly persons having other non-traditional and heterogenous combination of subjects are equally important for other work situations. Of course, this does not undermine the importance of persons having expertise within a given faculty. That is, the society requires persons having many diverse combinations of competencies. The universities, therefore, ought to reconsider the present "tight-jacket" teaching and research programmes.

The North Eastern Hill University, Shillong has partly addressed itself to prepare inter-disciplinary persons at postgraduate level. Each postgraduate student offers majority of his papers and courses from within one discipline taught by the parent department. In addition to these Intra-departmental Courses, each student has to offer one Extra-Departmental Course organised by the related Department other than his parent Department. For example, a student of M.Sc. Physics will offer most of the courses from his parent discipline of Physics and can also offer one course from Psychology as Extra-Departmental Course. There is a possibility that students might consider this Extra-Departmental Course as an additional burden. Therefore, awareness has to be created among students that the Extra-Departmental Course is a part and parcel of regular credit system. Teaching for these Extra-Departmental Courses will be carried out by the concerned department. The major parent department has not to interfere in the monitoring and evaluation of this course. In order to create sufficient awareness, students ought to be provided with detailed outlines of Extra-Departmental Courses.

Once the students start attending Extra-Departmental Courses organised and taught by the new staff members from other departments there is a likelihood of cropping up of new problems of common time table. The North Eastern Hill University (NEHU) has earmarked Friday afternoon as the common time for organising Extra-Departmental Courses. Therefore, the students can easily move from one department to another and there will be no clash of any activity organised within the parent department and between the related departments offering Extra-Departmental Courses.

This practice clearly illustrates that within the given constraints of Disciplinary Departmental Organisations, some beginning can be made. Innovative universities should plan such Extra-Departmental Courses provided the administration, teachers and students cooperate. A continuous interaction between the teachers has to be arranged. As a beginning a limited programme could be planned. Can't we do it ? □

Fulbright Award for University Administrators

Seven University Administrators from Indian universities have been selected for 1986 Fulbright Award sponsored by the US Council for International Exchange of Scholars. They include Mr. K. C. Kalra, Association of Indian Universities; Mr. M. Abdul Aziz, Univ. of Calicut: Mr. T. R. C. Reddi, Jawaharlal Nehru Technological University (JNTU); Mr. S.R. Acharya, Indian Institute of Technology, Kharagpur; Mr. Th. Joychandra Singh, Univ. of Manipur; Mr. S. P. Bhosale, Univ. of Poona and Mr. A. L. Vohra, University Grants Commission (UGC). They will visit U.S. Universities for six weeks for consultation and professional training with a view to promote international education exchange. They will also attend the annual sessions of American Association of Collegiate Registrars and Admission Officers and the National Association of Foreign Student Affairs.

Foreign Language Teaching in India

J.P. Dimri*

Present Situation

The main foreign languages being taught at most universities in India at present are Arabic, Persian, French, German and Russian. Arabic and Persian are taught in a comparatively large number of schools (Maktabs) and in most universities and some of their affiliated colleges. But it is mostly classical Arabic and Persian and their literature that are taught in our schools and colleges. Courses in Modern Arabic are offered only at a few places; two notable ones being the School of Languages, Jawaharlal Nehru University and the Central Institute of English and Foreign Languages (CIEFL). French and German are being taught only in a small number of schools in the country, while Russian is hardly taught at the school level. Almost all the universities in India now offer courses in French, German and Russian. Other languages such as Chinese, Japanese, Spanish etc., are taught at a very few places.

The teaching of foreign languages at different Indian universities has so far been restricted to the fulfilment of the following objectives :

1. Imparting elementary knowledge of the language to the undergraduate students (pre-degree courses, optional/subsidiary courses).
2. Popularising the foreign language (part-time Certificate, Diploma, Advanced Diploma Courses etc.).
3. Philological courses leading to the degrees of B.A. & M.A. in foreign languages.
4. Courses leading to the degrees of M.Phil/M.Litt. and Ph.D.
5. Teacher training courses offered by CIEFL.

This general pattern has in the meanwhile led to a stereotyped multiplication of these courses at different institutions in the country. This perspective of teaching foreign languages at the Indian universities has become more of an isolated activity without social relevance than an integral component in the organic development of a foreign language programme corresponding to the needs of the society, particularly, with regard to the employment problem.

Shortcomings

The situation has further been complicated by the following shortcomings in the existing foreign language teaching facilities in India.

(a) **Diversity of Standards**

Several universities in India have instituted different courses in foreign languages with similar designations, but these courses vastly differ in their course objectives, course duration, academic standards and evaluation procedures. This has led to confusion in determining equivalence. The syllabi have no uniformity in standard. They, at times, seem to have been designed on an ad-hoc basis.

(b) **Lack of Proper Teaching Materials**

Almost all the textbooks designed to teach these languages are imported. Firstly, they are extremely expensive and cannot therefore be bought by all students. Secondly, they are sometimes not relevant to the needs of Indian learners.

(c) **Lack of motivation among the students**

Most of the students, who opt for foreign languages, come from urban areas. Very few students from rural areas are aware of the possibilities of learning foreign languages. Lack of proper motivation is one of the major reasons as to why students who have shown very good results in learning foreign languages switch over to some other discipline for their graduation. Insecurity of job prospects constitutes another major factor inhibiting the students from choosing foreign languages for their professional career.

Planning a New Strategy

The following points must be kept in view while Planning a new strategy for development of foreign language teaching at national level :

(1) The entire field of foreign language teaching in India is still limited and it should be possible to frame a coordinated policy for the development of a relevant infrastructure and to bring about uniformity in the Syllabi at the national level, with special reference to (i) course structure; (ii) course content; (iii) teaching methodology; (iv) teaching materials; and (v) testing and evaluation.

(2) The conventional attitude towards the teaching of foreign languages should be modified in conformity with the existing national priorities:

(a) The modern foreign languages (in particular, German, French, Russian, Arabic, Chinese

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Japanese and Spanish) should be considered in the first instance as "Knowledge Languages," i.e., languages which are repositories of advanced and sophisticated knowledge in the area of science and technology. If we look at these languages only from the literary and aesthetic point of view, it will be difficult to retain the topical significance and international relevance of these languages while teaching them at the Indian universities. Unfortunately, the systematic teaching and learning of some of these "Knowledge Languages" has so far been neglected.

(b) The study of foreign languages should be understood as part of a cultural process, which reflects the corresponding dialectics of the thinking process with reference to sociology, history, political science, philosophy, psychology and other related fields of arts and social sciences.

(c) The foreign language teaching methods should reflect contemporary linguistic insights in teaching languages and their literatures. The approach to literary problems could be via the methods of Comparative Literature.

Any effective planning for the foreign language teaching on a national level must envisage an extension of the existing academic programmes by evolving need-oriented applied courses in the study of foreign languages. For this the present structure of courses in various foreign languages should be modified, and the main emphasis should be on the development of a suitable infrastructure for achieving this objective.

National Level Projects

The following national level projects could be encouraged :

1. **All-India Motivational Survey of Foreign Language Students**

   In order to find out well-defined possibilities of foreign language teaching at the university level, a national motivational survey of the students who opt for the foreign languages should be undertaken, with particular reference to the needs and motivation of the students coming from different social strata. It should provide the empirical data for the evaluation of the present conditions of foreign language teaching at different Indian universities, on the basis of which concrete changes in the conventional pattern of foreign language teaching can be introduced. The University Grants Commission (UGC) should set up a group of experts including a Psychologist, a Psycholinguist, a Sociologist and foreign language teachers to devise a relevant questionnaire. This survey project should also try to locate the main obstacles and impediments in the teaching/learning of foreign languages. A computerised study should be made of the obstacles and impediments (freins, as they are termed in Didactics software) on the one hand, and motivations and encouragement factors (accelerateurs) on the other, that operate within the system of teaching of foreign languages at the different levels—School, Junior College, College, and University (both M.A. and post M.A.). The common area of the project should be all towns and cities of India where foreign languages are taught at different levels.

The study of the 'freins' and 'accelerateurs' that affect the teaching of foreign languages is a vital area of research (in Didactics) that has long been ignored. There exist no studies, apart from a few regional ones undertaken by teachers of foreign languages as to the conditions under which the Foreign Language is taught in the country and as to what motivating and impeding factors exist in its teaching. Such a study has a multiple utility:

(i) A report on the conditions of the teaching of foreign languages in India would be of immense value to pedagogues, didacticians and educationists since it will furnish a first-time ever picture of what is really happening in the teaching of foreign languages in India and as to whether there exists a certain homogeneity or heterogeneity in this discipline.

(ii) The knowledge of factors that impede or motivate the teaching and learning of a foreign language would be of immense value to the U.G.C. in framing syllabi and curricula policies, as well as in framing policies regarding the teaching of foreign languages in India. The report would be a first step towards a remedial analysis of Foreign Language Teaching.

(iii) The report would also prove of immense utility in software production : manuals, workbooks etc. that are specifically geared to condi-

tions existing in India, since the preparation of such manuals has to take into account the constraints under which Foreign Language Teaching operates.

2. **Job-survey—Data Bank**

This is a complementary project to the above-mentioned project of Motivational Study. The aim of this project will be to identify those areas in the country where language experts are required, if possible with an estimate of future requirements. This will help to avoid creating a surplus of language experts in one narrow field of specialization, who cannot be absorbed in the employment market. This will also help in developing need-based (job-oriented) courses in foreign languages.

3. ***Uniformity of Syllabi***

The first prerequisite to bringing about reforms in foreign language teaching will be the introduction of some uniformity in the syllabi at the national level, which should ensure a high academic standard, effective teaching methodology, and relevant course content. For this purpose a foreign language cell may be set up at the national level in the UGC.

4. (a) **Promotion of Intensive Courses**

The majority of courses for beginners/advanced learners are extensive in nature : 100-160 teaching hours spread over a period of 10 months. While motivation, if any, exists during the initial stages of the course, the learners soon become demotivated because of low frequency, too long a time devoted in terms of months, and other factors inherent in such extensive courses, e.g. transfer of the learner to another place of work. To minimise such hazards and activate the processes of learning, as has been shown by psycholinguists, intensive courses be organized.

(b) **Promotion of Foreign Languages for Special Purposes (FLSP)**

Specially designed courses catering to the language needs of technical experts in different fields, like Government, Semi-government Laboratories, establishments such as BHEL, HAL, Ordnance Factories, etc. should be made available.

5. **Materials Production**

Despite a very long tradition of foreign language teaching in India, the production of textbooks which could adequately fulfil the requirements of Indian learners with reference to the basic vocabulary and basic grammar with a linguistic approach and the proper selection of texts has remained a neglected area. Efforts should be co-ordinated to undertake projects for the production of relevant foreign language textbooks at different teaching levels, which could cater to the specific needs of Indian students. This programme should be preceded by a critical evaluation of the existing foreign language textbooks in the Indian market. This project should be undertaken in a well-coordinated manner inviting expert teachers of foreign languages from different Indian universities to participate and cooperate in it. Since, at present, most of the textbooks for foreign language teaching are imported, and therefore, prohibitively expensive, it is absolutely necessary to achieve self-sufficiency by producing good quality, reasonably priced textbooks in India.

6. **Teaching Methodology and Training of Teachers**

There is a great scarcity of qualified and trained Indian teachers of foreign languages in the country. Some universities are still dependent on foreign teachers. (The largest number of foreign teachers that come to India is from the USSR). The CIEFL was therefore entrusted with the responsibility of developing effective teaching methodology and conducting regular training courses and refresher courses for the teachers of foreign languages on an all-India basis in order to make the teachers of foreign languages at different universities and other institutions get acquainted with the modern developments in the teaching of foreign languages and their literatures. The CIEFL has been organising courses in the teaching of French, German, Russian and Arabic, but, for certain reasons, universities in the country have not been able to make full use of the facilities available at the CIEFL. It is therefore important that the thrust of the courses is improved and university teachers encouraged to derive maximum benefit from these courses.

7. **Dictionary Project**

At present there hardly exists any plan for the national production of dictionaries (bilingual and multi-lingual) in Indian and foreign languages, which could have made the interaction between these languages possible. The UGC should assist long-term national projects for the production of such dictionaries with a view to creating the basis for future translation projects from foreign languages into various Indian languages and vice-versa.

8. **Translation Programme**

In spite of the urgent need for scientific translators

in India, there does not exist a systematic, recognised course at the University level to train professional translators. A broad-based curriculum must be envisaged to create in the students technical skills of high standards to translate scientific work from the source language into the target language. Simultaneously a research programme in translation theory must be initiated in cooperation with specialists in Applied Linguistics, with a view to setting up Translation Cells in the country. In this connection, the recent developments in the theory of translation must be considered and applied in the relevant context with modern linguistic approach. At the same time, the existing translators working at different organizations in India should be identified and trained in extended specialized areas (pertaining to language priorities) such as computer technology, petroleum technology, military science, nuclear physics and biological sciences.

The UGC should encourage the projects in the area of translation—projects such as a collection of articles on literary theory, linguistics, etc. by Russian/French/German/Arabic scholars translated into English or Indian languages. There should be specially designed programmes for training interpreters. These programmes should be of International standards.

9. **Studies in Comparative Literature & Research Programme**

The new approach to the teaching of foreign languages should not ignore their literary content. The study of languages not only includes the study of its linguistic patterns but also the study of the process of objectivisation of the human thinking in a particular language area. Accordingly, well defined courses of basic literary concepts and methods and a programme of studies in Comparative Literature should be incorporated in the existing academic programme.

The study of foreign languages and literatures can be very meaningful if it is made relevant to the contrastive Indian situation. The research programmes should, therefore, be developed at Centres of Advanced Studies at different Indian universities in Comparative Literature with special reference to modern Indian languages and their respective literatures. At the same time, area research programmes should be promoted in Socio-linguistics, Sociology of Literature with special accent on the modern experimental literatures from the foreign languages. Major foreign language learning centres should have area study programmes and facilities should be available to undertake the study of Comparative Literatures. While such integrated programmes of comparative literature be encouraged, the choice of these programmes should be carefully decided on the principle of immediate priorities reflecting utility and relevance both for (a) undergraduate/post-graduate programmes, and (b) projects leading to a research degree. Such a choice is imperative in order to stall the danger of proliferation by scholars of research projects, which do not respond even to the needs of their own institutions.

It is, therefore, recommended that a policy with regard to choice of research programmes both at the institutional and national level be formulated.

10. **Documentation Centre**

In accordance with the above-mentioned extended programme, a national Documentation Centre should be established pertaining to the work being done in the countries of foreign language concerned in the areas of Social Sciences, Life Sciences and Indology on the basis of which selective translation services can be started. This will be an important research activity for the teachers of foreign languages with a view to providing valuable research material for various research scholars from different universities in India. To start with, such a Centre can be attached to one of the major centres of foreign language teaching in India.

11. **National Library of Foreign Languages**

Due to the obvious constraints on the availability of specialised books in foreign languages and their literatures in India, it will be extremely necessary to set up a National Library of Foreign Languages at a Central place which can procure all relevant and useful books, if possible, in multiple copies for the use of foreign languages scholars from different Indian universities. The UGC has already sanctioned funds to CIEFL to build a Central Library. The National Library of Foreign Languages can be a part of this Central Library. The most essential service of the National Library will be to prepare exhaustive and specialised bibliographies at regular intervals and to make them available to scholars of foreign languages throughout India. This arrangement will facilitate the scholars of foreign languages to come in contact with recent publications and at the same time bring about a close interaction among the scholars in the country and in the foreign universities, thus contributing to reciprocal academic contacts. Needless to emphasise that such a library should have highly qualified personnel.

12. **Distance Education**

Teaching of Foreign Languages through distance education should be encouraged. Right now, only

CIEFL is offering courses leading to the degree of M.A. in French/German/Russian by correspondence and this innovation in the field of foreign language teaching has proved quite successful. The possibility of teaching of foreign languages through distance education should also be explored at elementary level. Mass media like Radio and T.V. can be helpful tools in this regard.

Suggestions for Improving the Teaching of Foreign Languages

1. For a fresh appointment as a teacher of a foreign language in a school, the candidate must possess a university degree in the foreign language concerned. He should be required to undergo a short training programme in language pedagogy during the first five years of his appointment, and regular participation in refresher courses for foreign language teachers should be encouraged by the employing school. Such training facilities are available at CIEFL.
2. For fresh appointments in colleges and universities, a candidate must possess a postgraduate degree in the foreign language concerned and a postgraduate diploma in the foreign language teaching from CIEFL or an equivalent qualification.
3. The teachers of foreign languages who are already teaching in schools or in colleges/universities should be required to take a Certificate and/or Diploma Course in the teaching of foreign languages from the CIEFL or an equivalent qualification. This should be made obligatory in the case of those teachers who do not possess any formal qualifications in language teaching.
4. Foreign experts, who are native speakers of the language concerned or who are suitably trained and qualified to teach the language and to contribute to the programmes of research and materials production, may be associated with centres of foreign language teaching, but no institution should be permitted to start a foreign language teaching programme, without Indian teachers, solely depending on foreign experts.
5. Facilities for the teaching of major foreign languages should be expanded even at the school level. Government-aided schools, mother-tongue-medium schools should be encouraged to start the teaching of these languages. The aim should be to provide adequate facilities in at least one school in every district for teaching one of the foreign languages effectively. To start with, such facilities may be provided in some selected schools in each State. The courses in foreign languages in schools should be introduced at the post-primary level, preferably at the higher secondary level so that the students may continue to pursue their interest in the foreign language even in college. This will facilitate a larger intake of students in various foreign languages at the college level, who will have the proper motivation for studying them upto and beyond graduation. The CIEFL should organise suitable courses for the training of teachers in foreign languages at the school level.
6. With regard to the place of Foreign Language Teaching in the New Education Policy (NEP) the following points should be considered :
   (i) There should be a distinct policy with regard to the manpower planning in terms of posts in the universities. The foreign language departments should be adequately staffed on a par with other departments. This can happen if the UGC makes a determined bid in the VII Plan to develop foreign language teaching in the country. To begin with, it could certainly look into the staffing pattern of those foreign language departments which offer postgraduate courses.
   (ii) The NEP should encourage more and more advanced courses in areas of translation, interpretation, dubbing of films, area studies; comparative studies, interdisciplinary studies, and job oriented courses. This can be done when more universities are encouraged to open courses in foreign languages.
   (iii) The NEP should visualise centres for imparting training in foreign languages for the diplomats, PROs, Defence and Intelligence personnel. The study of a foreign language should be made compulsory to those students in other fields who go in for post M.A. research and Ph.D.
   (iv) The NEP should visualise centres of advanced research, production of teaching materials, research in the area of methodology and comparative studies. The priority should be given to the production of textbooks, reference books, dictionaries, etc.
   (v) Some rationale should be evolved as to which foreign language should be introduced at various levels and at different institutions (schools, colleges, universities, research organizations).
   (vi) The UGC should provide more number of Teacher Fellowships under the F.I.P. to University Teachers, since, at present, the foreign languages are mostly taught at the university level.

The NEP should accord a rightful place to foreign

language teaching in the curricula of higher education and higher secondary education. The government should ensure that the states and the universities do not scuttle the plans of development of foreign language teaching in the country. There is no doubt that the learning and acquisition of a foreign language will be an asset to the nation and in the national interest. We should draw some lessons from the countries like USA, USSR, China, Canada and other Latin American countries which treat foreign language teaching on a par with any other discipline.

CIEFL Programme in Foreign Languages

The Central Institute of English and Foreign Languages has undertaken the following programmes in the field of the teaching of foreign languages:

(i) 4-month (one semester) Post-graduate Certificate Course in the Teaching of French, German and Russian.

(ii) 9-month (two-smester) Post-graduate Diploma Course in the Teaching of French, German, Russian and Arabic.

(iii) A 3-year Correspondence-cum-Contact Course leading to the M.A. degree in French/German/Russian.

(iv) M.Litt. in French/German/Russian/Arabic.

(v) Ph.D. in French/German Russian and Arabic.

(vi) It is proposed to introduce courses in Spanish in 1986-87.

(vii) Courses in Translation.

(viii) Each Department organises periodically short need-based courses, refresher courses, workshops, seminars etc., besides producing teaching materials.

National Committee for the Review of Foreign Language Teaching in India

A National Committee for the evaluation and revision of the existing foreign language teaching in India should be set up to assess critically the situation in this connection from time to time. The main function of this Committee should be :

(1) To make innovative suggestions in different academic programmes, teaching methodology, materials production and research.

(2) To work out overall coordination in the teaching of foreign language on an all-India level.

(3) To provide expertise in these programmes to other universities/institutes in India and eventually also abroad.

(4) To advise and assist the foreign language departments of Indian universities in developing and organising suitable academic programmes in the field of foreign languages. ◻

Shri Narasimha Rao Addresses Convocation of Roorkee University

Excerpts from the Convocation Address delivered by Shri P.V. Narasimha Rao, Union Minister for Human Resource Development, at the University of Roorkee, Roorkee on March 1, 1986.

"...An engineer is one of the very effective agents of change. As the structure and needs of a society change, the tasks of an engineer also change. His role, therefore, is a dynamic one. An engineer's systematic professional training and specific knowledge are necessary to solve a whole range of problems. These problems are an integral part of our society and our development process. The engineer who is engaged in solving them is an asset to the society and accountable to it.

Major national efforts in the country were launched to create a sound infrastructure of Science and Technology, covering a wide range of disciplines, both of basic sciences and applied technology. For this remarkable thrust to the development of Science and Technology, the country owes a great deal to our first Prime Minister, Jawaharlal Nehru who visualised the use of technology as a catalyst of change and the harbinger of a new India free from poverty, superstition and dogma; a new society based on values of rationality, objectivity and secularism. Pandit Nehru's keen interest in this respect may be judged by the fact that, inspite of his heavy responsibilities, he himself selected and appointed the first Vice-Chancellor of this University and visited this University several times thereafter. During the past 35 years or so, a large number of national research laboratories and Institutes of higher learning have been set up. The Science and Technology manpower in our country today is over two million—the third largest in the world. The technical community in India is at the take off stage and we have to steer it in the proper direction to achieve maximum benefit for our vast masses.

An example of what scientific research can do for the prosperity of the nation is provided by our green revolution. A large part of the credit for this splendid performance goes, no doubt, to the Indian farmer and the various Central and State agencies involved; but it must equally be recognised that our irrigation engineers, agricultural scientists and others working in allied disciplines played a key role in this achievement.

We have taken up our industrial development at a time very different from the one during which the present developed nations undertook theirs. The ruthless colonial exploitation which provided the resources for the industrialisation of the developed nations are unthinkable for us and are contrary to our philosophy. Right from the beginning, social welfare and increasing living standards for our common people have been our aims. We have also to guard against environmental degradation and pollution which went uncontrolled in those nations till recently. Our social philosophy requires an active role for the public sector and development with social justice. These requirements make the process of economic development a much more complex task; but since they have been accepted by the nation, they must be fulfilled.

It is often said that progress is a one-way street; there is no going back at any point. The more we do, the more we have to do. That is the dynamics of human effort and aspiration. While we have made considerable progress since independence, we discover with every passing day that we have to go and keep going, a long way. We have to provide a decent human existence to our population, meanwhile the parameters of what is considered decent are themselves bound to change. Today, a large percentage of our population lacks proper shelter, health care, schooling and the minimum nourishment. If we do not remove this stigma within the present century, the magnitude of the problem would simply make it much more difficult to resolve thereafter. The Prime Minister's call in this regard is the call of the Time. I call upon the young engineers graduating today to respond to this call.

Engineers and technologists being trained today have to acquire skills and use them to develop the country for collective social good. They have the potential to do so in all sectors of our economy.

In the food sector, as I mentioned before, we have made commendable progress and obtained self-sufficiency, though the level of nutrition is not quite what it should

be. There is potential for doubling of our present food production by application of our present day knowledge. The irrigated area has to be increased from the present 60 m to 110 m hectares over the next 20 years. We have to become self-sufficient in chemical fertilisers and simultaneously develop bio-technological process for nitrogen fixation and pest-control. We have so far developed only 15% of our hydropower potential—this has to be rapidly increased. All other energy sources have also to be exploited to reduce our dependence on imported petroleum which is a major drain on our foreign exchange earnings. This would require development of safe nuclear power, and not only research into other renewable sources of energy, but also a real break-through in affordability and availability.

To house the millions who are without proper shelter, techniques of rapid and low cost construction have to be evolved. I understand that a good deal of work has been done in this regard at Roorkee. However, I am aware of cases where the design developed at the laboratory level and proven at the pilot level were refused for adoption on a large scale by the relevant departments of Governments. No research can prosper in the absence of applicational support. While no one would advocate leaps in the dark in technology, I hope Governments would make bold to cut through all inhibitions and give a fair trial to innovative research, even accepting some risk in the process. I am keenly interested to know how far the fruits of research are actually reaching the people at grassroot levels. I have found little reason for elation in this respect so far. In the rural housing sector, the main problem seems to be the roof. We need a roof which is inexpensive, climatically appropriate and durable. I would be happy to be told that all these three factors have been successfully met. Meanwhile I find the whole countryside dotted with cement concrete structures of low height which become ovens in the Indian summer and refrigerators in winter, in striking contrast to the thatched roof designed by our forbears and used for centuries.

Textiles are one of our oldest industries, yet we are unable to provide adequate clothing to all our people. Our products are more costly and have to be made competitive.

We are now taking the directive principles of universal education seriously; and aim to provide compulsory primary education to all our children. This will require enormous construction, besides development of educational aids. I suspect that the ideal school building has not yet been designed in India. What we are constructing are sheds, often with zinc sheet roofs in areas where the mercury crosses 44° centigrade. For the child stuffed into these structures, education is invariably accompanied by depression... I feel strongly that the children of India deserve a better deal.

Our Prime Minister has recently said that we are not willing to accept so-called 'appropriate technology' if in effect, it means obsolete technology. India is a great nation and must aim high. The latest developments in Computer Science and Communications, in space and Bio-technology must be brought to bear on the problems of the nation. The skills that our young engineers acquire in Institutions of higher learning like Roorkee, would enable them to do so, if they work with dedication to the profession and the nation. Success of technical education and industrial progress requires that the role of the educational institutions, the industry and the Government are identified and proper linkages established between them. Establishment of effective linkages requires identification of areas of mutual interest and development of mechanisms for fruitful interaction. There are more than 150 engineering institutions in our country today. It seems necessary to establish some effective mechanism of interaction between these institutions so that they are able to attend to the problems predominating in different areas and to build up a network of information and a fund of insight into all relevant developmental aspects of our fast changing society.

Academic institutions provide the two most important ingredients for industrial growth, namely, technical manpower and bulk of fundamental knowledge and exploratory research. These provide the motivation for developing strong links between Industry and Academia. Unfortunately, there is a lack of meaningful professional interaction between industry and most of our academic institutions. There is need to improve arrangements for dissemination of information from institutions to industry, to curtail response time and to set up machinery for project formulation and monitoring of progress. Cooperative research, cooperative education and industrial liaison are important modes of fostering institution - industry partnership.

There are a number of government agencies which provide funds to support research of timeliness and promise. Broadly speaking, academics put up proposals for research programmes and apply for finance for research assistants, technicians, equipment and supplies. The proposals are sorted out discipline-wise and judged by committees of academic peers; those considered most worthy are funded in full, others in part or not at all. It seems worthwhile to consider the introduction of cooperative research grants for projects put up jointly by a company

and an academic institution. The criteria of approval may be that the academic institution will benefit from the work by developing techniques of deriving new knowledge and understanding, that the company expects to exploit the results, that the collaboration is genuine to the extent of the company being prepared to put up a fair portion of the resources required and that the work is technically advanced.

There should be an explosion of new institutional forms and new institutional relations with industry. A new phenomenon could be 'nurseries' in engineering institutions to house and give support to new young entrepreneurial ventures. These nurseries would foster interactive environment between industry and education where technological companies of tomorrow can develop and grow, honing their technical and entrepreneurial skills in an environment rich in the knowledge necessary to bring innovative ideas to the market place.

All the schemes devised to improve contacts between university and industry are hindered by fundamental differences of objectives and attitude. The academic's aim is to generalise and explain a class of natural phenomena in a way which can be defended in argument with his peers; the industrialist needs a solution to a particular problem and does not consider it sinful to employ a phenomenon he does not understand. Perfection is essential to the academic, speed to the industrialist. Nature produces neither career academics nor career industrialists; a person's attitudes and sympathies are developed by his environment. It is vitally important that academics have some understanding of, and some sympathy for, the attitudes of those outside the academic sphere, and do not prevent their students—99% of whom are destined for the world outside—from developing such sympathy. Opportunities for generating such sympathy may be provided by facilitating involvement of an academic in a firm or a company employee in an academic institution.

There is, I believe, a growing recognition in institutions like yours and others that technology can be a major way out of the dilemmas that confront us. But the recognition is still vague, particularly in respect of our rural problems. While facilities like T.V., Video and a host of gadgets are reaching the villages, the application of improved technology to the village problems themselves is perfunctory. Electric pumpsets abound in rural areas, but the problems created by over-drawal of underground water and consequent steep and rapid fall in subsoil water levels remain to be studied and tackled effectively. The effects of excessive use of chemical fertilisers on soil texture and its humus content do not seem to have attracted as much attention as they should. The problem of designing a perfect bullock-drawn cart which minimises the strain on the animal and is still affordable by a poor farmer has not found a solution, as far as one can see. Water-logging, alkalinity and deterioration of agricultural soil consequent on intensive cultivation in the context of the green revolution, are raising their heads and crying for attention. And last but not the least, environmental problems are fast over-taking us and complacency would simply be suicidal.

A major goal of our technical endeavour is to bring about a renaissance among our rural population, improve their standard of living and make rural settlements beautiful, healthy and attractive from the point of view of both employment and residence. The ethos of rural development is not to convert a village into an undeveloped town, but to organise village life as a self-contained, distinctive entity. Technology has, until now, tended to drain the village of its competent manpower and drive it into the urban areas in search of better opportunities. This is bound to happen because of the sheer advantages of scale in industrialisation which the cities possess today. Could technology, therefore, devise an industrial pattern which is scale-neutral and thus would not leave the rural areas totally devoid of talent in the long run ? I am not sure that this real challenge of technology, whose ramifications will become clearer with further environmental and social cost, has been fully grasped yet. Can the universities play a role in this new thinking ? This is not merely a question of traditional skill or conventional expertise. It is, in essence, a question of vision and intuition. I am flagging this point because I am convinced that nothing short of this vision will work in the rural areas of India. You cannot plan the development of manpower in an area which is constantly being depleted of that manpower. The first step in the plan or even before undertaking any plan, is to retain the talented manpower by devising an economic activity which is both gainful and satisfying. This, in the ultimate analysis, is a challenge of technology.

The long term health and prosperity of our country depends on a well-educated, well-trained corp of engineers and technologists. Because of their pivotal role in the economy, engineers should be able to contribute to necessary social reforms. Your university and similar institutions must not only produce skilled scientists and engineers but also create "Technical Awareness" in the society by making technology subserve the purposes of our vast masses. Time beckons to our engineers to assume this expanded leadership role. It is rightful role; it is a challenging role; and considering what is at stake in the economy, it is a momentous role." □

SHRI GURU GOBIND SINGHJI COLLEGE OF ENGINEERING & TECHNOLOGY

NANDED : 431 602

(With Cent-percent Grant-in-aid from Government of Maharashtra and approved by Govt. of India)

Application(s) are invited for the under mentioned post(s) on plain paper giving details such as address, age, date of birth, qualification, experience, salary drawn and expected so as to reach the Principal, Shri Guru Gobind Singhji College of Engineering & Technology, Nanded-431 602 within 15 days from the date of publication of the advertisement.

Sr. No.	Name of the Post		No. of Post(s).
1	2		3
1.	**PROFESSORS**	: INSTRUMENTATION	01
		PRODUCTION ENGINEERING	01
		SUGAR TECHNOLOGY	01
		TEXTILE TECHNOLOGY	01
		WATER MANAGEMENT	01
2.	**ASSISTANT PROFESSORS**	: ELECTRONICS	03
		INSTRUMENTATION	02
		PRODUCTION ENGINEERING	04
		SUGAR TECHNOLOGY	02
		TEXTILE TECHNOLOGY	02
		WATER MANAGEMENT	05
3.	**TRAINING & PLACEMENT OFFICER**	..	01
4.	**LECTURERS**	: ELECTRONICS (Two posts reserved for SC categories & one post reserved for ST category)	06
		INSTRUMENTATION (One post reserved for SC categories & one post reserved for ST category)	05
		PRODUCTION ENGINEERING (Three posts reserved for DNT categories).	08
		SUGAR TECHNOLOGY (One post reserved for SC category).	04
		TEXTILE TECHNOLOGY (One post reserved for SC category).	04
		WATER MANAGEMENT (Three posts reserved for SC categories & two posts reserved for ST categories).	10
5.	**INSTRUCTOR OF PHYSICAL EDUCATION**	..	01

PAY SCALE :

1. PROFESSOR .. : Rs. 1500-60-1800-100-200-125/2-2500
2. ASSISTANT PROFESSOR : Rs. 1200-50-1300-60-1900
3. TRAINING & PLACEMENT OFFICER : Rs. 1200-50-1300-60-1900
4. LECTURER .. : Rs. 700-40-1100-50-1300-Assessment-50-1600
5. INSTRUCTOR IN PHYSICAL EDUCATION : Rs. 700-40-1100-50-1300-Assessment-50-1600

MAXIMUM AGE LIMIT :

Post — 1 : 45 years
Post — 2 & 3 : 40 years
Post — 4 & 5 : 35 years

1. Relaxable by 5 years in the case of Backward class candidate(s).
2. If suitable candidate belonging to a particular reserved category for which the post is reserved is not available, the post will be filled up from a suitable candidate belonging another reserved category, if available.

MINIMUM QUALIFICATION :

1. **PROFESSORS** : An eminent scholar with published work of high quality, actively engaged in research. Ten years experience of teaching and/or research. Experience of guiding research at doctoral level.

   OR

   An outstanding Engineer/Technologist with established reputation who has made significant contribution to knowledge.

2. **ASSISTANT PROFESSORS** : Good academic record with a Doctor's Degree in the relevant field. About 5 years experience of teaching and/or research and development. Provided further that candidates not possessing Ph.D. may be considered if they have to their credit equivalent research published work or design/development work of high order either in the Institution or in an industry.

   OR

   In the case of persons to be recruited from industry or professional field, candidate should possess good academic record with recognised professional work about 7 years which would include innovation and/or research and development.

3. **TRAINING & PLACEMENT OFFICER** : (a) Consistently good academic record with a Bachelor's degree in Engineering/Technology. First Class at Bachelor's degree and/or Master's Degree level.
   (b) Industrial experience of at least 5 years with recognised Project Works.
   (c) Aptitude for entrepreneurship. Placement & Training. Continuing Education Programmes for in service Engineers.

4. **LECTURERS** : (a) Master's Degree in appropriate field in Engineering/Technology.
   (b) Consistently Good academic record with a Bachelor's Degree in Engineering/Technology. First Class at Bachelors Degree and/or Master's Degree level.
   (c) One year relevant professional experience outside academic research Institutions.

   Having regard to the requirements of emerging fields of Engineering and developing interdisciplinary programmes the requirement of Engineering/Technology degrees may be waived in the case of otherwise well qualified candidates.

5. **INSTRUCTOR IN PHYSICAL EDUCATION**
   (a) Masters Degree in any field from recognised University/Institution.
   (b) Must possess the minimum qualification of a Post-graduate Diploma Certificate or a Degree in Physical Education.

(c) Experience of one/two years as Physical Education Instructor desirable.

Provided further that if a candidate does not possess professional experience, he will have to obtain desired professional experience within a period of five years from his appointment, failing which, he will not be able to earn future increments, until he fulfils these requirements.

(a) The appointments will be subject to the terms and conditions of service to be prescribed by the Shri Guru Gobind Singhji College of Engineering & Technology, Nanded.
(b) The candidates will have to attend the interview(s) at their own cost.
(c) Persons who are already employed shall send their applications through proper channel.
(d) Persons shall account for breaks, if any, in their academic career.
(e) The Institution will be undertaking consultancy assignments which the faculty members are permitted to join.
(f) Fresh graduates and Post graduates in Engineering may also be considered for appointment as Lecturers, if persons with prescribed qualifications are not available.
(g) Canvassing, direct or indirect will lead to disqualification.

(Prof. G.S. Kadu)
Director of Technical Education
Maharashtra State, Bombay
and
Chairman, Board of Governors
SGGSCE&T., Nanded.

B.M. Naik
PRINCIPAL & SECRETARY

INSTITUTE OF CORRESPONDENCE EDUCATION
UNIVERSITY OF JAMMU
ADMISSION NOTICE

Applications are invited for admission to the following courses through correspondence for the session 1986-87 :—

1. **B.Ed.**

The last date for the receipt of application forms for the B.Ed. Course through Correspondence (Session 1986-87) has been extended upto **30th of April, 1986.** The prescribed application forms alongwith prospectus containing full information regarding the course can be obtained on all working days on cash payment of Rs. 8/- at the counter or by remitting Rs. 10/- through crossed Bank draft/Postal Orders drawn in favour of the Director, Institute of Correspondence Education, if required by post.

2. **Certificate Course in Urdu through Hindi Medium.**
3. **English Improvement Course**

Eligibility Condition for Course No. 2 & 3

The minimum qualifications for taking up the Certificate Course in Urdu through Hindi medium and English Improvement Course is Matriculation.

The last date for the receipt of application forms for course No. 2 & 3 is 30th April, 1986. The prospectus-cum-admission forms for these courses containing full information can be obtained on all working days from the office of the institute on payment of Rs. 6/- by cash at the counter or by remitting Rs. 8/- through Bank draft/Postal Orders drawn in favour of the Director, Institute of Correspondence Education if required by post.

DIRECTOR
Institute of Correspondence Education
University of Jammu

Cochin University of Science & Technology : A Backgrounder

The Government of Kerala issued an Ordinance (No. 2 of 1986) on 23-2-1986. transforming and upgrading the present University of Cochin into a full-fledged Science and Technology University of the State of Kerala. This brings the State's endeavours in fostering technological education in the State in line with the national policy. The new University is expected to function as a Centre of Excellence providing leadership in the development of technological studies and research in the State. Though the University of Cochin was conceived and established under the Act of 1971 as a Science and Technology University, the University was not able to fulfil its assigned role owing to various factors, not the least among them being its in-built contradictions that tended to cloud its vision.

Within 9 years of the University's existence, in 1980, the then Education Minister Shri Baby John declared that there was an urgent need for establishing a new Technological University in the State, especially as the Cochin University had failed to assume the role originally assigned to it. At its meeting held on 18-12-'80, the Cochin University Senate reacted sharply to this suggestion of the Minister, and passed a resolution to the effect that the Cochin University should be further developed into a Technological University, "instead of taking steps for starting another University for the same purpose."

The University Syndicate also appointed an Expert Committee under the Chairmanship of Dr. M. M. Chakrabarthy, the then Vice-Chancellor of Jadavpur University for formulating a plan and strategy for the further development of the University as a full-fledged science and technology University of the State. In its report submitted in December 1982, the Committee pointed out that the Cochin University had all the basic competence and culture to be further developed and upgraded into a Centre of Excellence in Science and Technology and concluded that "Cochin University has been given a task totally different from that of the other rung of conventional universities. The organisation to carry out this task has also to be totally different.... It is recommended that the academic and administrative bodies of the University be restructured". The Senate of the Cochin University at its meeting held on 22-7-1983 endorsed the Expert Committee's view that the University should be developed "into a first-rate Science and Technology University as recommended by the Committee".

Meanwhile, the State Planning Board had come up with a proposal for setting up an "Advanced Centre for Studies in Science and Technology in Kerala" with identical objectives. The Government felt that the Planning Board's proposals required to be examined in the context of the Chakrabarthy Committee report on Cochin University, and set up a Committee in September 1983 with Dr. S. Vasudev as Convener to go into the whole issue and make recommendations to the Government. The Committee, in its report submitted to Government in October 1984 observed : "It is inevitable that if the Cochin University is to be developed into an institution for advanced research in science and technology, its management structure and funding process will have to be different from that of conventional universities..... A structure somewhat similar to that of some of our national institutions will be more suitable for fulfilling the objectives in view".

The Government concurred with the recommendations of the Vasudev Committee, and the Governor in his address to the State Legislature on March 6, 1985 announced the Government's resolve to upgrade the University of Cochin into "an institution of higher learning in specialized branches of technology". The State Cabinet while approving the Vasudev Committee Report, set up a Sub-Committee of its own to examine the proposals regarding the structural changes in the academic and administrative bodies that would be required if the new technological university were to function efficiently and well.

In framing the laws governing the new Cochin University of Science and Technology, the Government has benefitted from the organisational structures of the Anna University, national institutions such as the Indian Institutes of Technology, and the latest thinking of the University Grants Commission as contained in its report on the working of central universities. The constitution of the Syndicate and the academic bodies virtually follow the pattern recommended by the University Grants Commission.

The Cochin University of Science and Technology has, as its primary objective, promotion of post-graduate studies and advanced research in applied science, technology, industry and management, and its territorial jurisdiction for the purpose will extend to the entire State of Kerala. It will be of a unitary type without any affiliated institutions, though it can have recognised institutions for special studies and research.

Seminar on problems of religious life

An All India Seminar on Problems of Religious Life was held

at the University of Poona, Pune, from 22nd to 25th Jan, 1986. The Seminar, sponsored by the University Grants Commission, was inaugurated by Dr. V.G. Bhide, Vice Chancellor, Poona University. In his inaugural address, Dr. Bhide spoke about the complex problems of religion in theory as well as action, in a country like ours, which, on the one hand, is rapidly trying to integrate itself at all levels, social, cultural and intellectual and on the other, where there are various religious traditions and styles of thought and action. He expressed the hope that the discussions and deliberations by the seminar will help in arriving at a proper perspective on these complex and timely issues.

The Seminar, attended by participants from all over the country and from different disciplines such as Philosophy, Sociology, Political Science, Psychology, Law, Medicine and Theology, was conducted in two sessions.

In the first session papers were presented and discussed in depth, on the following issues from the perspectives of Hinduism, Christianity and Islam:

(1) An asessment of Indian Culture;
(2) Secularism and Religion;
(3) Socio-Political Practices and Institutions; and
(4) Moral Institutions and Practices.

The second session was devoted to an extensive and thorough discussion of the following specific issues:

(i) Equality of Religions and the Problem of Conversion;

(ii) Religion and a Common Code and Law; and

(iii) Religion and National Integration.

Though there were differences of opinion, as was expected by the very nature of issues covered, all the participants were agreed that the seminar was useful in so far as it made such important discussions possible.

India & Islamic Studies

A three day National Seminar on 'Contributions of India to Islamic Studies' was inaugurated by Professor Wasiur Rahman, the acting Vice-Chancellor of Aligarh Muslim University. He said that the field of Islamic study was very vast that extended from 500 A.D. to the present day and added that Islam could be studied as a religion, culture, civilisation and could be viewed as a philosophy and ethics and a source of solace to the afflicted if one cared to believe in one God as an object of love.

In his key-note address, Prof. S. Maqbul Ahmad, an eminent scholar said that this was the tradition of Oriental Studies in Europe that made the scholars of the East as well as of India interested in studying their own Islamic culture and civilisation of the past. While Sayyid Jamal Al-Din Al-Afghani roused the masses against Western political domination and the corrupt and degenerate Muslim rulers, scholars like Shaikh Mohammad Abdullah spent their intellectual energies in educational and religious reforms. In India, Sir Syed Ahmad Khan adopted the same path for the improvement pathetic plight. He said that the Indian Muslims today were passing through a period of transition from a medieval to a modern society and were witnessing social transformation.

A large number of eminent muslim scholars and Islamologists from all over the country attended the three day seminar.

New postgraduate courses at Cochin Varsity

The Academic Council of the Cochin University of Science & Technology has approved a proposal to start an M.Sc. programme in Biotechnology in the University. Bio-technology is an emerging multi-disciplinary area which requires for its development a strong base of molecular biology, genetics, microbiology, biochemistry and bio-engineering, and this has been identified as a thrust area by the Government of India. Only a dozen Universities in the country such as the Jawaharlal Nehru University, Banaras Hindu University, Poona University and Aligarh Muslim University are offering such a programme at present. Graduates in chemistry, botany, zoology, chemical engineering, agriculture, medicine and pharmacy with atleast 50% marks will be eligible for admission to this course.

Other courses cleared by the Academic Council include an M.Sc. programme in Analytical Chemistry and Chemical Instrumentation, M.Phil. degree programme in Chemistry and an M.Sc. programme in Computer Software. Admission to the M.Sc. programme in Computer Software will be based on marks obtained at the B.Sc. degree (Physics or Mathematics) examinations, entrance test and interview. All candidates selected for this programme will get a monthly scholarship of Rs. 800/- with a job guaranteed on the successful completion of the course.

Latest apparatus for Mysore University

A highly sophisticated 'Chaixmeca Microthermometry' apparatus which could reveal the presence of liquid inclusions in rocks and mineral deposits has been acquired by the Geology Department of Mysore University, as a gift from the Federal Republic of Germany.

The apparatus is the first of its kind in southern India and has been procured through the Volkswagon Research Foundation Grant of West Germany. This apparatus makes it possible to find out the composition, temperature,

pressure and depth at which some of the metalliferous deposits like gold, copper, silver, lead and zinc are formed. Among its industrial applications it can be used to detect inclusions in stones like diamond, ruby, and garnet which constitute a flow in the stone. In Petrology, it could be used in the study of formation of rocks and determining whether the terrain was submerged or uplifted.

Committee for Examination Reforms

Union Minister of Human Resource Development has set up a Committee of Education Ministers of Andhra Pradesh, Rajasthan, Tripura, Haryana, Manipur, Sikkim and Meghalaya and some experts to go into the matter of Examination Reforms at all levels of education, including Higher Education. Dr. P.L. Malhotra (NCERT), Prof. S. Sampath (IIT, Kanpur), Fr. T.V. Kunnunkal (CBSE), Dr. B.M. Udgaonkar (TIFR), Dr. Amrik Singh, Prof. Rais Ahmed and Dr. V. Natarajan (AIU) are among the experts on the Committee.

Seminar on animal, plant and microbial toxins

The Department of Life Sciences of the University of Bombay will organise an "All India Seminar on Animal, Plant and Microbial Toxins' sometime during March 1987. The topics proposed to be covered at the Seminar are : Biology/Anatomy; Chemistry/Biochemistry; Physiology/Pharmacology; Structure-function relationship/evolution and Immunological and chemical aspects. Further details about the seminar can be had from Dr. Vijay Khole, Convenor, All India Seminar on Animal, Plant and Microbial Toxins, Department of Life Sciences, University of Bombay, Vidyanagari, Santacruz (East), Bombay-400 098.

News from Agril. Varsities

Seminar on Future Strategies for Animal Science Education

The Union Minister of State for Agriculture, Mr. Yogendra Makwana regretted that desired attention has not been paid to the Animal Science education in the Agricultural Universities, thereby neglecting areas like Animal Breeding, Animal Nutrition and other important aspects of Animal Science. He also regretted that imbalances in the animal science curriculum have not been corrected with the result that adequate stress has not been laid on the animal health.

His inaugural address to the 3-day National Seminar on 'Future Strategies for Animal Science Education' organised by the Haryana Agricultural University, Hisar was read out in his absence by the Dean, Postgraduate Studies.

With the vast network of infrastructure for imparting agricultural education in the country, there was a strong need to create a cadre of post high school level trained personnel who can work in the areas of dairy, poultry education and artificial insemination. He commended the vocational training being imparted at the plus two stage which would help create professional cadres in animal science. He hoped that with the expertise available in the agricultural universities, the programme of introducing animal science component in the agricultural education would be successful.

Mr. Makwana added that the country's interest demanded continuing emphasis on production with stress on health cover to support and sustain production targets. The National Commission on Agriculture had recommended that independent faculties should offer degrees in Animal Production, Animal Products Technology and Animal Health. It is high time that these recommendations are seriously considered, adopted and applied in suitable degree programmes.

Mr. L.D. Kataria, Vice-Chancellor, Haryana Agricultural University, who presided over the inaugural function, said that insufficiency of specialised manpower in animal science sector had resulted in slow transfer of improved technologies to the farmers. Extension Education in animal science should be so oriented that close linkages could be developed between research system on the one hand and state government agencies on the other to identify package of technologies in animal production.

Over hundred scientists from all over the country participated in the National Seminar.

Breakthrough in dryfarming techniques

Dr. K.S. Nandpuri, Director of Extension Education of the Punjab Agricultural University commended the dryfarming techniques evolved by the University. He emphasised the need of building storage structures for collecting excess water which was lost by runoff. He was presiding over a Field Day at Village Lasara in Hoshiarpur District. He said that the stored water could be used for giving a life-saving irrigation to the crop. Dr. Nandpuri advised the farmers to adopt alternative occupations like vegetable cultivation, bee-keeping, poultry farming and the fruit and forest plantation to supplement their income.

Dr. Ranjodh Singh, Senior Soil Scientist of PAU and in-charge of

the Dryfarming Project said that this breakthrough in crop production in the Kandi area was a result of timely sowing WL 410 and PBW 2265 varieties of wheat, drilling of optimum dosages of fertilizers and treatment of wheat seed with Aldrin against termites.

New project for weed control research

The I.C.A.R. has sanctioned a four-year project for research on weed control to the Kerala Agricultural University. The scheme has an outlay of Rs. 7 lakhs and is financed by the United States of America, under the Special foreign currency research grant programme. The main objective of the project is to evolve sound weed management practices for crops and cropping systems with special emphasis on plantation crops.

The scheme will be implemented in the University Department of Agronomy, College of Horticulture, Vellanikkara.

We Congratulate . . .

(1) Dr. A.C. Banerji, who has been appointed Vice-Chancellor of Avadh University, Faizabad.

(2) Prof. Moonis Raza, Vice-Chancellor, University of Delhi, who has been conferred the title of 'Prof. Emeritus' by the Jawaharlal Nehru University.

CALENDAR OF EVENTS

Proposed Dates of the Event	Title	Objective	Name of the Organising Department	Name of the Organising Secretary/Officer to be contacted
March 31-April 12, 1986	Workshop on Power Electronics for Mines	Dissemination of latest developments on Power Electronics for Mines	Department of Electronics & Instrumentation ISM, Dhanbad	Prof. P. R. Basu, Deptt. of Elec. & Instrumentation, ISM, Dhanbad
May 2-15, 1986	Summer School on Crystal Growth, Characterisation and Device Fabrication	An orientation course in (i) Experimental Crystal Growth; (ii) Theories of Crystal Growth; (iii) Nucleation; and (iv) Characterisation	Crystal Growth Centre, Anna University, Madras	Dr. P. Ramasamy, Crystal Growth Centre, Anna University, Madras
May 8-10, 1986	National Seminar on Interaction between research in Universities and Industries	To identify the industries where University research can play an important role and find out ways and means of active interaction between research in Universities and Industries	University of Delhi, Delhi	Dr. Yogesh Kumar, Department of Physics and Astrophysics, University of Delhi, Delhi
May 19-24, 1986	Refresher course for practitioners in psychiatric social work	To acquaint the faculty members with advances in psychiatric social work	National Institute of Mental Health & Neuro-Sciences, Bangalore	The Director, NIMHANS, P.B. No. 2900, Bangalore
May 19-June 1, 1986	Summer School on Crystal Growth and Characterisation of Advanced Materials for Solid State Applications	An orientation course in (i) Experimental Crystal Growth; (ii) Theories of Crystal Growth; (iii) Nucleation; and (iv) Characterisation	Crystal Growth Centre, Anna University, Madras	Dr. P. Ramasamy, Crystal Growth Centre, Anna University, Madras
May 26-June 21, 1986	Summer School in Analysis and Probability	Topics covered are : Probability theory and Stochastic processes; Fourier analysis on R^n; and Functional analysis.	Indian Statistical Institute, Calcutta	In-charge, Summer School 1986, Stat-Math Divn., Indian Statistical Institute, Calcutta
July 7-18, 1986	Short-term training programme on Abstracting and Indexing	Application of abstracting and indexing methods, use of vocabularies in indexing, construction of indexing language (thesaurus) for information system	National Institute of Small Industry Extension Training, Hyderabad	Mrs. K. Subhashini, Course Director, NISIET, Yousufguda, Hyderabad

NATIONAL INSTITUTE OF HYDROLOGY

JAL VIGYAN BHAWAN, ROORKEE

ADVERTISEMENT NO. 5/86-NIH

Dated : 10-3-1986.

Applications are invited for the following posts in National Institute of Hydrology (A Govt. of India Society), Roorkee from Indian Nationals satisfying qualifications and experience laid down therefor:—

1. SCIENTIST 'F' : 1 Post
   (In the area of Integrated Planning and/or Hydrological Investigations).

2. Scale of Pay : Rs. 2000-125/2-2500 (Unrevised) The total emoluments at the initial of the scale is Rs. 4020/- excluding H.R.A.

3. Age : Below 50 years.

4. Qualifications :
   1. High Academic qualifications in Civil Engineering with specialisation in Hydrology or Water Resources or equivalent.
   2. Ph.D. Degree desirable.
   3. Experience in field problems corporate membership in professional institutions desirable.
   4. About 10 years experience in teaching, research, design or planning.
   5. Proven ability of conducting and guiding research.

NOTE : Selected persons can be appointed on deputation basis also.

The above mentioned post carry usual allowances as admissible under the Central Government Rules. Age will be relaxable for persons already in service in the Institute and other Govt./Semi Govt./Autonomous organisations as well as candidates belonging to SC/ST community, retrenched employees of Defence services and physically handicapped persons, as per rules of the Govt. of India.

Age will be determined as on April 30, 1986.

Persons already employed in Govt./Semi Govt./Autonomous bodies should apply through proper channel.

Application forms may be obtained by **15-4-1986** from the Chief Administrative Officer, National Institute of Hydrology, Jal Vigyan Bhawan, University of Roorkee Campus, Roorkee-247667 (UP). Application forms duly completed in duplicate with copies of all testimonials along with an application fee in the form of Indian Postal Order of Rs. 8/- (SC/ST candidates are exempted from payment of fee) payable to the National Institute of Hydrology at the Roorkee University Post Office should reach the Director, National Institute of Hydrology, Jal Vigyan Bhawan, University of Roorkee Campus, Roorkee-247 667 (U.P.) on or before **30-4-1986.**

INDIAN INSTITUTE OF PETROLEUM

P.O. IIP, Mohkampur, Dehradun

Advertisement No. 3/86

Applications are invited for one Research Associate under the sponsored Project "Pipeline Transportation of Waxy Crudes."

EMOLUMENTS : In the range of Rs. 1400/- to Rs. 2000/- depending on the qualifications and experience with an annual increase of Rs. 100/- p.m. subject to maximum of Rs. 2000/- plus HRA as admissible under the rules.

AGE : 35 years.

TENURE : Two years maximum.

ESSENTIAL QUALIFICATIONS : Candidates having Ph.D. Degree in Physical/Organic Chemistry or 3 years experience in research, design and development after obtaining M. Tech. Degree in Chemical Engineering/Technology will be eligible.

DESIRABLE QUALIFICATIONS :

1. Candidates with Science qualifications should preferably have Physics, Chemistry & Maths. at B.Sc. level.
2. He should be conversant with the characterization of Petroleum Products and/or optical microscopy.

Applications on plain paper giving complete bio-data i.e. Name, Father's Name. Date of birth, Qualifications (High School onwards) and list of Publications should reach the Director, Indian Institute of Petroleum, Dehradun-248005 latest by **21.4.1986.** Incomplete applications will not be entertained.

NIGERIAN UNIVERSITIES ACADEMIC STAFF VACANCIES

Applications are invited from suitably qualified candidates to fill the following vacant positions in Nigerian Universities :

1. **FACULTY OF MEDICINE/DENTISTRY/PHARMACY**		
Professor/Readers/Senior Lecturers/Lecturers	—	in all fields
2. **FACULTY OF ENGINEERING**		
Professor/Readers/Senior Lecturers/Lecturers	—	,,
3. **FACULTY OF SCIENCE**		
Professors/Readers/Senior Lecturers/Lecturers	—	,,
4. **FACULTY OF LAW**		
Professor/Readers/Senior Lecturers/Lecturers	—	,,
5. **FACULTY OF ENVIRONMENTAL SCIENCES**		
Professors/Readers/Senior Lecturers/Lecturers	—	,,
6. **FACULTY OF VETERINARY MEDICINE**		
Professors/Readers/Senior Lecturers/Lecturers	—	,,
7. **FACULTY OF SOCIAL SCIENCES**		
Professors/Readers/Senior Lecturers/Lecturers	—	,,
8. **FACULTY OF EDUCATION**		
Professors/Readers/Senior Lecturers/Lecturers	—	,,
9. **FACULTY OF AGRICULTURE**		
Professors, Readers/Senior Lecturers/Lecturers	—	,,
10. **MEDICAL ENGINEERING TECHNOLOGISTS/TECHNICIANS**		

QUALIFICATIONS

Candidates for the post of Professor, Reader and Senior Lecturer should have a Ph.D. degree and be outstanding scholars with considerable teaching and research experience. They should have a good record of scholarly publications, together with the capacity to initiate, develop and supervise research projects, and to undertake administrative responsibilities if necessary.

CONDITIONS OF SERVICE

Conditions of service are generally as applicable in the Nigerian public service.

(a) **SALARY**

Professor	USS 15—N14280 x 720—N15720
Reader	USS 14—N12732 x 660—N15372
Senior Lecturer	USS 13—N11364 x 576—N14820
Lecturer I	USS 11—N9000 x 360—N10080
Lecturer II	USS 9—N7550 x 205—N8040

N1.00=£0.80 or US $1.00

METIIOD OF APPLICATION

Candidates are required to submit ten typewritten copies of applications and curriculum vitae, indicating full names, posts sought, date and place of birth, nationality, permanent and current address, telephone number, number and ages of children. The curriculum vitae should also indicate educational institutions attended with dates, academic and professional qualifications obtained with dates, past and present employer, list of publications and research activities if any and with dates, names of journals, and names and addresses of 3 referees who know you professionally.

Applications should be addressed to :

Nigeria High Commission
(Recruitment Section),
21, Palam Marg, Vasant Vihar,
New Delhi-110 057.

All applications should be received not later than two weeks from the date of this advertisement. Applicants are advised to clearly indicate their office and home telephone numbers for easy and quick contact at the shortest possible notice.

कार्यालय कुल सचिव,

चन्द्रशेखर आजाद कृषि एवं प्रौद्योगिक विश्वविद्यालय,

कानपुर।

प्रवेश परीक्षा–1986

(पूर्व-पशुचिकित्सा परीक्षा) पी. वी. टी. (पूर्व-कृषि परीक्षा) पी. ए. टी.

विश्वविद्यालय जून 14 व 15, 1986 को कानपुर, मथुरा, बरेली एवं गोरखपुर केन्द्रों में बी.वी.एस-सी. एण्ड ए. एच. तथा बी. एस. सी. (एजी. एण्ड ए. एच.) में प्रवेश हेतु एक प्रतियोगी परीक्षा आयोजित करेगा। इस परीक्षा में बैठने के लिए न्यूनतम अर्हताएं निम्न हैं :

(1) बी. वी. एस-सी. एण्ड ए. एच. (पशुचिकित्सा विज्ञान कोर्स) — **विज्ञान (जीव विज्ञान सहित) या कृषि में इण्टरमीडिएट परीक्षा या उसके समकक्ष परीक्षा उत्तीर्ण।**

(2) बी. एस-सी. (एजी. एण्ड ए. एच.) (कृषि कोर्स) — **कृषि में इण्टरमीडिएट या उसके समकक्ष परीक्षा में उत्तीर्ण।**

वे अभ्यर्थी जो वर्ष 1986 को इण्टरमीडिएट परीक्षा में बैठ रहे हैं, भी इस परीक्षा के लिये आवेदन दे सकते हैं। परन्तु विश्वविद्यालय में उनके प्रवेश पर विचार इण्टरमीडिएट परीक्षा उत्तीर्ण करने पर ही किया जायेगा।

इस परीक्षा में बैठने के लिये अधिकतम आयु सीमा 1 जुलाई, 1986 को 22 वर्ष है। अनुसूचित जाति, जनजाति एवं पिछड़े वर्ग के अभ्यर्थियों के लिये आयु सीमा में तीन वर्ष की छूट है।

आवेदन-पत्र एवं इन्फार्मेशन बुलेटिन जिसमें पाठ्यक्रम एवं परीक्षा के नियम इत्यादि दिये हैं, विश्वविद्यालय के कुल सचिव या पशुचिकित्सा विज्ञान एवं पशुपालन महाविद्यालय, मथुरा के सहायक कुल सचिव से रु. 10/- नकद भुगतान करके प्राप्त किये जा सकते हैं। परन्तु जो अभ्यर्थी आवेदन-पत्र डाक से मंगवाना चाहते हैं, उन्हें : **रु. 15/- की धनराशि का क्रास्ड पोस्टल आर्डर जो कि लेखा नियन्त्रक, चन्द्रशेखर आजाद कृषि एवं प्रौद्योगिक विश्वविद्यालय, कानपुर** के पक्ष में जारी हो एवं नवाबगंज, कानपुर डाकघर पर देय हो, सीधे कुल सचिव को भेजना चाहिये।

अथवा

रु. 15/- की धनराशि का बैंक ड्राफ्ट (क्रास्ड) जो कि स्टेट बैंक आफ इण्डिया द्वारा जारी हो एवं लेखा **नियन्त्रक, चन्द्रशेखर आजाद कृषि एवं प्रौद्योगिक विश्वविद्यालय, कानपुर के पक्ष में हो एवं बैंक की विश्वविद्यालय शाखा (कोड नं. 3809)** पर देय हो, सीधे कुल सचिव को भेजना चाहिये।

अभ्यर्थी को जिस पते पर आवेदन-पत्र मंगवाना हो उसे साफ-साफ लिखना चाहिये। कुल सचिव कार्यालय में आवेदन-पत्रों की प्राप्ति की अन्तिम तिथि **25 अप्रैल, 1986** है। दिनांक 15 मई, 1986 तक आवेदन-पत्र रु. 20/- अतिरिक्त विलम्ब शुल्क के साथ प्राप्त किये जायेंगे।

अपूर्ण या निर्धारित तिथि के बाद प्राप्त आवेदन-पत्र स्वीकार नहीं किये जायेंगे। विश्वविद्यालय किसी प्रकार की पोस्टल देरी या अभ्यर्थी द्वारा आवेदन-पत्र प्रेपित करने में हुई देरी के लिये उत्तरदायी नहीं होगा।

शारदा प्रसाद तिवारी
कुल सचिव

AIU Library

Established in 1965, the AIU Library has acquired over the years a valuable collection of books and documents on Higher Education. Among the topics prominently represented are Educational Sociology, Educational Planning, Educational Administration, Teaching & Teachers' Training, Examinations, Economics of Education and Country Studies. Developing fields of Adult Education, Continuing Education and Distance Education, and Educational Technology are also well stocked. The Library is particularly strong in its collection of reports whether they are on the setting up of different universities or on the state of Higher Education. Files of Annual Reports of different universities are also maintained. Readers are kept informed of the latest acquisitions through our column 'Additions to AIU Library'.

The Library also receives about a 100 periodical titles on Higher Education. All these are indexed regularly and a select list appears every month as 'Current Documentation in Education'.

Doctoral Degrees awarded during the preceding month are reported as 'Theses of the Month' while registrations made for such degrees are flashed as 'Research in Progress'. Bibliographies are also compiled and supplied on demand.

Research scholars and students of education are welcome to use these resources. The Library is open from 9-30 a.m. to 5-30 p.m. Monday through Friday. Access can also be had through inter library loan for which requisition must be made through your Librarian.

THESES OF THE MONTH

A list of Doctoral Theses Accepted by Indian Universities

BIOLOGICAL SCIENCES

Anthropology

1. Lakshmi, M. Bhaskara. *A study of pulmonary functions and their relations to anthropometric parameters in men and women of Chittoor District, Andhra Pradesh.* U Madras.

Microbiology

1. Sundaram, S.P. *Isolation and characterisation of non-01 Vibrio Cholerae strains from clinical sources in an endemic area.* U Madras.

Biochemistry

1. Alvares, Keith Leo. *Studies on acid hydrolases of mammalian tissues : Lysosomal hydrolases of brain.* U Madras.

2. Cameotra, Swaranjit Singh. *Studies on the mechanism of hydro-carbon utilization by microorganisms.* Gauhati U.

3. Govindarajan, P. *Plasma lipids and lipoprotein cholesterol in health and in coronary heart disease.* U Madras.

4. Mathur, Rajesh. *Hydrolases in nervous tissue : Studies on D-mannosidases of monkey brain.* U Madras.

5. Mohan, Fatima. *The metabolic adaptation to chronic energy deficiency.* OU, Hyderabad.

6. Parameswari, C.S. *Mycotoxicoses : Biochemical studies on the mycotoxin terreic acid produced by Aspergillus terreus.* U Madras.

7. Rathinavelu, A. *Biochemical studies on the mycotoxin cyclopiazonic acid.* U Madras.

8. Shamsia Banu, L. *Biochemical studies on Aspergillus versicolor toxicity.* U Madras

9. Subramaniam, Rajalakshmi. *Glyco conjugates and membrane bound enzyme changes in diabetes mellitus controlled by a hypoglycemic extract of Gymnema sylvestre R.Br.* U Madras.

10. Umarani, D. *Metabolic alterations in liver and kidney due to chronic ethanol ingestion controlled by SKV, a new Indian drug.* U Madras.

11. Vijendran N. *Alterations in blood glucose homeostasis and lipid metabolism in the liver and kidney in diabetes mellitus : Effect of an hypoglycaemic extract of Gymnema Sylvestre. R.Br.* U Madras.

Botany

1. Aruna Kumari. *Stability and gene effects in wheat, Triticum aestivum L.* Meerut U.

2. Babeley, Gopi Shankar. *Studies in the vitality, viability and vigour of some forest tree seeds.* HS Gour, Sagar.

3. Britto, S. John. *Taxonomic studies on the flora of the Tamilnadu carnatic : Polypetalae and monocotyledons.* U Madras.

4. Doraiswami, R. *Studies on the species of Gaulepars from Tamilnadu, India.* U Madras.

5. Gopinathan, K. *Studies on the developmental morphology and histochemistry of some galls induced by thrips. (Thysanoptera: insecta) from Southern India.* U Madras.

6. Grewal, Mohinder Kaur. *Effect on certain growth regulators on physiology of pod filling in moong, Vigna radiata L. Wilczek.* PAU, Ludhiana.

7. Gunasekhar, V. *Studies on the effect of fungicides on the rhizosphere mycoflora of certain local crop plants.* SKU, Anantapur,

8. Khan, Zill-E-Ali Haider. *Cytological analysis of beans, Part I.* U Bihar, Muzaffarpur.

9. Kulkarni, Arun Haribhau. *Physiological studies in marine alga, Gracilaria corticata. J.Ag.* Shivaji U, Kolhapur.

10. Lakhani, Sujata. *Regulation of poly (A) polymerase activity and poly(A) RNA in germinated excised embryos of wheat, Triticum aestivum* L. U Delhi.

11. Malini. R. *Metabolic studies in Aspergillus parasiticus Speare.* U Delhi.

12. Manjunath. K. *Aeropalynological studies with particular reference to pollen allergy.* Bangalore U.

13. Murugesan, K. *Effect of trace elements on Rhizoctonia bataticola and groundnut-R. bataticola interaction.* U Madras.

14. Nageswara Rao, M. *Mechanism of action of systematic fungicides on Drechslera oryzae and their effect on host, Oryza sativapathogen (D. oryzae) interaction.* U Madras.

15. Naresh Kumar. *Effect of air pollution on plant growth.* Meerut U.

16. Narmatha Bai, V. *Morphological studies in the Rutaceae.* U Madras.

17. Paramasivam, M. *Studies in airspora of Tiruchirapalli.* U Madras.

18. Pardha Saradhi, P. *Physiology of development and senescence of capitula in Chrysanthemum.* U Delhi.

19. Patariya, H.M. *Influence of mold flora on aflatoxin and deterioration of ground nut.* Vikram U, Ujjain.

20. Ramachadran, V.S. *A study on the flora of Tellicherry Division of Cannanore District, Kerala.* U Madras.

21. Ravi, G.M. *Experimental studies in vitro on Linum, Carthamus and Sorghum.* Kar U, Dharwad.

22. Selvaraj, K. *Lechaenoglchius in nodules of some tropical legumes.* U Madras.

23. Sen, Sima. *Pharmacognosy of common Apocynaceous leaf drugs in situ and in vitro.* U Calcutta.

24. Sharma, Akhilesh Kumar. *Studies on the effect of certain agro-chemicals on microfungi associated with phylloplane of Calotropis procera (Ait) R. Br.* Meerut U.

25. Sharma, Anita. *Physico-chemical and algal studies of some Industrial effluents.* U Meerut.

26. Sindhu, Indra Rani. *Studies on phyllosphere mycoflora of Spinacia oleracea Linn.* Meerut U.

27. Singh, Dharmendra Kumar. *Eco-physiological studies on Disum sativum Linn and Lens esculentus Moench, in response to industrial effluent and auxin.* Meerut U.

28. Singh, Karam Pal. *Phylloplane mycoflora of some aquatic weeds.* Meerut U.

29. Sokhi, Jaswant. *Morphological and histochemical studies on floral cecidogenesis and phyllody in Salvadora persica and Terminalia arjuna.* U Delhi.

30. Srivastava, Rakesh Kumar. *Morphogenesis of root nodules in Vigna cyamopsis and Cajanus Cajan.* Meerut U.

31. Sundararajan, M. *Studies on some Indian nemoliales.* U Madras.

32. Thirumaran, K. *Studies on species of Dioscorea of Comibatore District, Tamil Nadu, India.* U Madras.

33. Uday Charaya, Myank. *Taxonomical, ecological and physiological studies on the mycoflora decomposing wheat and paddy crop residues.* Meerut U.

34. Vajravelu, E. *Studies on the flora of Palghat District, Kerala.* U Madras.

Zoology

1. Alexander, Saley. *Studies on some South Indian pseudo corpions Class : Arachnida).* U Madras.

2. Balasubramanian, K. *Influence of adrenal on epididymis.* U Madras.

3. Barman, Ramprasad. *Biosystematic studies of the cyprinid fishes of the genus Danio Hamilton from the Indian region with a discussion on the phylogeny of the subfamily Rasborinae.* U Calcutta.

4. Bhatnagar, Madhu. *Studies on structure and physiology of some notably pathogenic nematodes and in vitro effects of certain anthelmintics on them.* Meerut U.

5. Chattopadhyay, Chandana. *Studies on certain aspects of regulation of replication and transcription of Drosophila genome.* U Calcutta.

6. Chellathai, C. *Studies on the enzymes associated with reproduction and metabolism in a pseudophyllid cestode, Penetrocephalus Ganapatii Rao,* 1960. U Madras.

7. Chinnathambi, N. *Effect of aimilin on the structure and chemistry of the larval cuticle of Bombyx mori L. (lepidoptera : Bombyciaae).* U Madras.

8. Dasgupta, Sadhana. *Studies on the oribatid mites of Western Tripura, Tripura.* U Calcutta.

9. Devarajan, K.V. *Bio-ecological studies on some South Indian membracids with special reference to Oxyrhachis rufescens Walker (Homoptera : Insecta).* U Madras.

10. Dutta, Debjani. *Experimental studies on the action of cisdichlorodiammineplatinum II during vegetative phase and conjugation in some ciliated protozoa.* U Delhi.

11. Jeyachandra, C.M. *Bio-ecological studies on aquatic insects with special reference to Lethocerus indicus Lap & Serv (Hemiptera : Belostomatidae : Lothocerinae).* U Madras.

12. Khanna, Santosh. *Cumulative toxicity of DEEP : Ultrastructural changes of gonadal and other tissues of rats.* Meerut U.

13. Kori, Sadanand S. *Studies on Caphaline gregarines, (Apicomplexa : Sporozoa) of certain insects.* Gulbarga U.

14. Madhu Bala. *Sterilization of Callosobruchus chinensis Linna by gamma-radiations for use in the sterile insect release method for pest suppression. Ph* U, Chandigarh.

15. Maheshwari, S.L. *Neurological manifestations of phosalone. an organophosphate pesticide in the edible crab, Scylla serrata Forskal (Crustacea : Decapoda).* U Madras.

16. Margaret, C. Ridling. *Studies on the poison apparatus and venom of three Indian spiders.* U Madras.

17. Mathur, Ranjana. *Cytological and biochemical effects of HCH isomers and their accumulation in microorganisms.* U Delhi.

18. Mony, D. *Studies on Monogenea of marine fishes : Morphology, population and enzymes associated with reproduction and metabolism.* U Madras.

19. Panneerselvam, M. *Endocrine aspects of moulting and reproduction in the penacid prawn, Metapenaeus monceros Fab (Crustacea : Decapoda).* U Madras.

20. Raghavendra Rao, D. *Studies on toxic effects of certain mercurial compounds in a fresh water fish, Channa punctatus.* Meerut U.

21. Rajan, R. Varatha. *Bioecological studies on some anthophilous thrips (Thysanoptera : Insecta) from Southern India.* U Madras.

22. Ravichandran, S. *Limnological studies on Buckingham Canal, Madras, India, with special reference to sewage pollution.* U Madras.

23. Ravi, G. *Studies on neurochemical and neurophysiological alterations in the two species of edible fish, Labeo rohita Ham and Cyprinus carpio communis Linn exposed to phosalone, an organophosphate pesticide.* U Madras.

24. Revi Kala, S. *Some aspects of phytoplankton blooms in relation to pelagic fishes.* U Cochin.

25. Saraswathy. Mary Agnes. *Reproductive and nutritional cycles in the dagrid catfish, Mystus gulio Ham of the Kovalam Backwaters.* U Madras.

26. Sharma, Subhadra. *Studies on corpuscular structures of human blood affected by acute and chronic leukaemia.* Meerut U.

27. Siddiqui, Abad Ahmad. *Studies on the environmental toxicity of certain organochlorine, organophosphate and carbamate compounds with special reference to fresh water fish, Channa punctatus.* Meerut U.

28. Sivaram, P. *Studies on the variation of tRNA with special reference to inhibition of aminoacylation in certain Invertebrates.* U Hyderabad.

29. Srinivasan, M. *Studies on chaetognathae from the Indian Ocean.* U Madras.

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